

# Tongxi ZHOU

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## EDUCATION

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**School of Electrical and Information Engineering, Tianjin University**

Sept. 2017 - Jun. 2021

Bachelor of Engineering, Major in Automation

- **GPA:** 3.91/4.0 (top 2 among 182, top 1 among female students), **4.0/4.0 for all math and CS courses**
- **Major Courses:** Modern Control Theory (100/100), Introduction to Artificial Intelligence (99/100), Introduction to Robotics (98/100), C++ (94/100), SQL (97/100)
- **English:** 627 (CET4, one-pass), 557 (CET6, one-pass), 90 (TOEFL)
- **Awards:** National Scholarship (2018 and 2019, the highest honor for undergraduates in China, **top 0.2%**), Merit Student Honor (2018 and 2019, top 10%)
- **Programming Skills:** solid expertise in C++, Python, MATLAB, SQL, TensorFlow; experienced in Java, C, C#, assembly language, Kotlin; proficient in using AutoCAD, Altium Designer, Quartus, Multisim, Android Studio and other professional software

## RESEARCH EXPERIENCES

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I will be work as an intern in **Cyber Physical Systems Group, Ming Hsieh Department of Electrical Engineering, University of Southern California** this summer.

**Research on Garbage Classification Based on Deep Learning | RA**

Mar. 2019 – Mar.2020

Advisor: Ming Zeng, Institute of Robotics and Automation Systems, Tianjin University

- Collected and filtered images to construct a public garbage dataset including 10 subclasses and a total of 10,624 images
- Applied and compared different techniques of data augmentation, such as flipping, to expand the dataset
- Contributed to developing a public garbage classification algorithm based on a customized CNN architecture, conducting the numerical tests, and demonstrating a high accuracy of 96.35%
- Contributed to a fourth-author paper, which has been accepted for presentation at the 39th Chinese Control Conference

**Portable Gesture Control System Based on Kinect | RA**

May. 2018 - May. 2019

Advisor: Xi Chen, School of Electrical and Information Engineering, Tianjin University

- Designed an Android application for Bluetooth communication by Java, and successfully controlled the movement of the tracking car with a mobile phone
- Contributed to extracting human skeleton lines by developing programs in MATLAB
- Designed an interface program to communicate between the Bluetooth Module and the Gesture Recognition Module

## SELECTED PROJECTS

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**Electrical Laboratory Management System Based on SQL and C#**

Nov. 2018 - Dec. 2018

Advisor: Mei Yu, College of Intelligence and Computing, Tianjin University

- Designed a database for the lab manager to query, insert, and delete the data of equipment, projects and courses by using the SQL server
- Developed a form application for the lab manager to check the equipment of the Electrical Laboratory by C# (contributed over 1,000-line codes)
- Scored 97/100 in the coursework of SQL, and was the only student who developed an extra form application

### **Handwritten Digit Recognition Using Machine Learning | TA**

Feb. 2019 - Jun. 2019

Advisor: Xi Chen, School of Electrical and Information Engineering, Tianjin University

- Recognized the handwritten digit based on the BP Neural Network with MATLAB
- Recognized the handwritten digit based on Convolutional Neural Network using Python
- Scored 99/100 in the course work of Introduction to Artificial Intelligence, ranking the 1<sup>st</sup> among 82 students

### **Interdisciplinary Contest In Modeling**

Feb. 2018

Advisor: Liang Fu Lu, School of Mathematics, Tianjin University

- Built a fragile state index model to study the direct and indirect influences of climate change on national fragility
- Predicted the changes of the fragile states index on the basis of climate change, by using several methods including Set Pair Analysis, GE McKinsey Matrix, Cross-entropy Method, etc.
- Earned Honorable Mention in 2018 Interdisciplinary Contest in Modeling, and was the only prize-winning freshmen team in the university

## **LEADERSHIP EXPERIENCE AND ACTIVITIES**

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### **National undergraduate innovation training program | Project Leader**

Apr. 2019 – Apr. 2020

- Received \$700 financial support from Tianjin Municipal Government
- Chaired monthly meetings to discuss the progress of our project
- Prepared for the interim reply and made a report to professors and students

### **College Welcome Newcomers Party and College New Year's Eve Party | Hostess**

Sept. 2017 – Dec. 2017

- Hosted the Welcome Newcomers Party and the New Year's Eve Party of the college
- Written the host draft independently and praised by the director of Art Department of Student Union

## **SKILLS AND INTERESTS**

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- **Language Skills:** Chinese (native), English (the only student in our department who got the qualification for double degree in English)
- **Hobbies:** Sprinting (the first place in the 100-meter and 200-meter race), Calligraphy, Sketch